







if the point of initial contact is near the center of the modified surface model, moving the two models together further until the periphery of the modified surface model just contacts the original surface model;

16. (Original) An optical lens for improving the vision of an eye, the lens comprising areas of focus on a surface thereof corresponding to different locations on the corneal surface of the eye, each area of focus being shaped to shift the focus of the corresponding location of the cornea to a predefined reference axis in the eye.

17. (Original) The lens of claim 16 wherein the lens comprises one of a cataract lens, a phakic lens an intraocular lens, an intracorneal lens and a spectacle lens.

18. (Currently Amended) The lens of ~~any one of claims 16 or 17~~ claim 17 wherein the reference axis passes through the HIGH point.

19. (Currently Amended) The lens of ~~any one of claims 16-18~~ claim 18 wherein the reference axis is the LOCAL Z-AXIS.

20. (Currently Amended) The lens of ~~any one of claims 16-19~~ claim 19 wherein the surface of the lens is constructed as a central cap-shaped portion and at least one peripheral band portion radially outward, with respect to said referenced axis, of the cap-shaped portion.

21. (Original) The lens of Claim 20 comprising a plurality of band portions successively radially outward of each other.

22. (Currently Amended) The method of ~~any one of claims 20-21~~ claim 21 wherein a periphery of the cap-shaped portion is at least approximately 4.5 millimeters away from the reference axis.

23. (Currently Amended) The lens of ~~any one of claims 16-23~~ claim 22 designed with the aid of computer program which produces a surface model of the cornea which closely represents





cornea in three dimensions as a smooth, free-form surface, the treating step comprising changing the shape of at least a portion of the model to produce a modified surface model.

39. (New) The method of Claim 38, wherein the treating step comprises one of conforming the shape of at least a portion of the cornea to the modified surface model, and conforming the shape of at least a portion of a surface of an optical lens to the modified surface model.

40. (New) The method of claim 39 wherein a central cap-shaped portion is modeled on the original surface model as a series of arcs, rotationally spaced about the reference axis and conforming to the surface model, said multiple locations being selected arcs extending between the reference axis and the periphery of the cap-shaped portion, an arc being refocused by:

locating the point X at which the perpendicular bisector of a chord between the ends of the arc intersects the reference axis;

the distance between point X and the intersection of the reference axis with the surface model being used as a radius to scribe, from point X, a modified arc between the two ends of the arc; and

smoothly joining modified arcs to define the modified surface model.

41. (New) The method of claim 38, wherein a band portion, radially outward of a central cap-shaped portion, is modeled on the original surface model as a series of arcs rotationally spaced about the reference axis and conforming to the surface model, said multiple locations being selected arcs extending between peripheries of a band portion, an arc being refocused by:







55. (New) The lens of claims 28 wherein the controller makes use of computer program which produces a surface model of the cornea which closely represents at least a portion of the surface of the cornea in three dimensions as a smooth, free-form surface, the controller causing the model to be modified in shape at each corresponding location so that at least a portion of the lens conforms in shape to the modified surface model.